

0219.02

What is claimed is:

1. A portable high efficiency electrostatic sampling device comprising:

- (a) at least one discharge electrode,
- (b) a high voltage power supply operatively connected to said at least one electrode,
- (c) a power source operatively connected to said high voltage power supply and at least one discharge electrode, wherein said high voltage power supply effects ionization from said at least one electrode;

wherein said device generates a sufficient electrostatic charge to attract particulates to a grounded, conductive material.

2. The device of claim 1 further comprising a voltage regulator operatively connected to said power source and said high voltage power supply.

3. The device of claim 1 further comprising a first sealed compartment creating a water-tight enclosure of electronic parts.

0219.02

4. The device of claim 3 further comprising a second sealed compartment creating a water-tight enclosure of said power source.
5. The device of claim 1 wherein said power source is selected from the group consisting of at least one battery, an AC powered adaptor with a DC output, and combinations thereof.
6. The device of claim 1 wherein said grounded, conductive material is a media suitable to culture microorganisms.
7. The device of claim 1 wherein said grounded, conductive material is selected from the group consisting of water, cell culture media, microbiological media, metal material, and conductive carbon.
8. A method for collecting airborne particulates comprising:
 - (a) placing a portable high efficiency electrostatic sampling device of claim 1 in a vicinity to be sampled,
 - (b) applying a high negative voltage to at least one discharge electrode to create a strong electrostatic field close to a grounded, conductive material, and

0219.02

(c) collecting particulates in or on said grounded, conductive material.

9. The method of claim 8 wherein said particulates are microorganisms.

10. A method for collecting airborne particulates comprising:

(a) placing a portable, high efficiency electrostatic sampling device of claim 2 in a vicinity to be sampled,

(b) applying a high negative voltage to at least one discharge electrode to create a strong electrostatic field to airborne particulates, and

(c) collecting particulates in or on a grounded, conductive material.

11. The method of claim 10 wherein said particulates are microorganisms.